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"Process for producing xanthohumol present in hops and
5 xanthohumol-rich hop extract obtainable thereby"

Our reference: H 2181 - er/ed

Claims

- 10 1. Process for producing xanthohumol present in hops
comprising the steps:
- a) preparing an ethanol pure resin extract from
hops, milled hops or hop powder;
 - 15 b) extracting the ethanol pure resin extract with
a liquid or supercritical solvent in which the
xanthohumol is insoluble;
 - c) washing with a first solvent mixture the
extraction residue obtained after the
20 extraction with the liquid or supercritical
solvent and separating off the first solvent
mixture and substances dissolved therein;
 - d) extracting with a second solvent mixture the
xanthohumol from the extraction residue washed
25 with the first solvent mixture, the first
solvent mixture being more polar than the
second solvent mixture; and
 - e) producing from the extracted solution the
extract containing the xanthohumol in high
purity.
- 30 2. Process according to Claim 1, wherein the ethanol
pure resin extract obtained in step a), to obtain
a free-flowing material, is mixed with a
particulate carrier before the extraction with the
35 liquid or supercritical solvent in which the
xanthohumol is insoluble.

3. Process according to Claim 1 or 2, wherein the liquid or supercritical solvent in which the xanthohumol is insoluble is selected from the group consisting of alkanes having 1 to 6 carbon atoms, petroleum ether and carbon dioxide.
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4. Process according to Claim 2 or 3, wherein the particulate carrier is an organic or mineral carrier selected from the group consisting of maltodextrins, silica gels, particulate silicas, kieselguhr and magnesium silicate gels.
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5. Process according to Claim 2 or 3, wherein the carrier is kieselguhr.
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6. Process according to one or more of the preceding claims, wherein the ethanol pure resin extract obtained in step a) is mixed with the particulate carrier in a weight ratio of about 1:1.
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7. Process according to one or more of the preceding claims, wherein the ethanol pure resin extract is extracted as under step b) with supercritical CO₂.
- 25 8. Process according to one or more of the preceding claims, wherein the first solvent mixture is a mixture of at least one organic solvent and water.
9. Process according to one or more of the preceding claims, wherein the at least one organic solvent of the first solvent mixture is miscible with water in any ratio.
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10. Process according to one or more of the preceding claims, wherein the at least one organic solvent of the first solvent mixture is selected from the group consisting of alcohols, ketones and carboxylic esters.
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11. Process according to one or more of the preceding claims, wherein the at least one organic solvent of the first solvent mixture is methanol and/or ethanol.
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12. Process according to one or more of the preceding claims, wherein the at least one organic solvent of the first solvent mixture is methanol.
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13. Process according to one or more of the preceding claims, wherein the weight ratio of the at least one organic solvent to water in the first solvent mixture is 2:3.
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14. Process according to one or more of the preceding claims, wherein the second solvent mixture is a mixture of at least one organic solvent and water.
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15. Process according to one or more of the preceding claims, wherein the at least one organic solvent of the second solvent mixture is miscible with water in any ratio.
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16. Process according to one or more of the preceding claims, wherein the at least one organic solvent of the second solvent mixture is selected from the group consisting of alcohols, ketones and carboxylic esters.
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17. Process according to one or more of the preceding claims, wherein the at least one organic solvent of the second solvent mixture is methanol and/or ethanol.
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18. Process according to one or more of the preceding claims, wherein the at least one organic solvent of the second solvent mixture is methanol.

19. Process according to one or more of the preceding claims, wherein the weight ratio of the at least one organic solvent to water in the second solvent mixture is 2:1.
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20. Process according to one or more of the preceding claims, wherein not only the organic solvent of the first solvent mixture but also the organic solvent of the second solvent mixture is methanol and the ratio of methanol to water in the first solvent mixture is 2:3 and in the second solvent mixture is 2:1.
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21. Process according to one or more of the preceding claims, wherein the hop extract obtained in step e) contains xanthohumol at a concentration of at least 85 percent by weight, based on the dry weight of the resultant hop extract.
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- 20 22. The xanthohumol-containing hop extract obtainable by a process according to one or more of Claims 1 to 21.